The *Santa Ana Watershed* Integrated Water Resources Plan (IWRP)

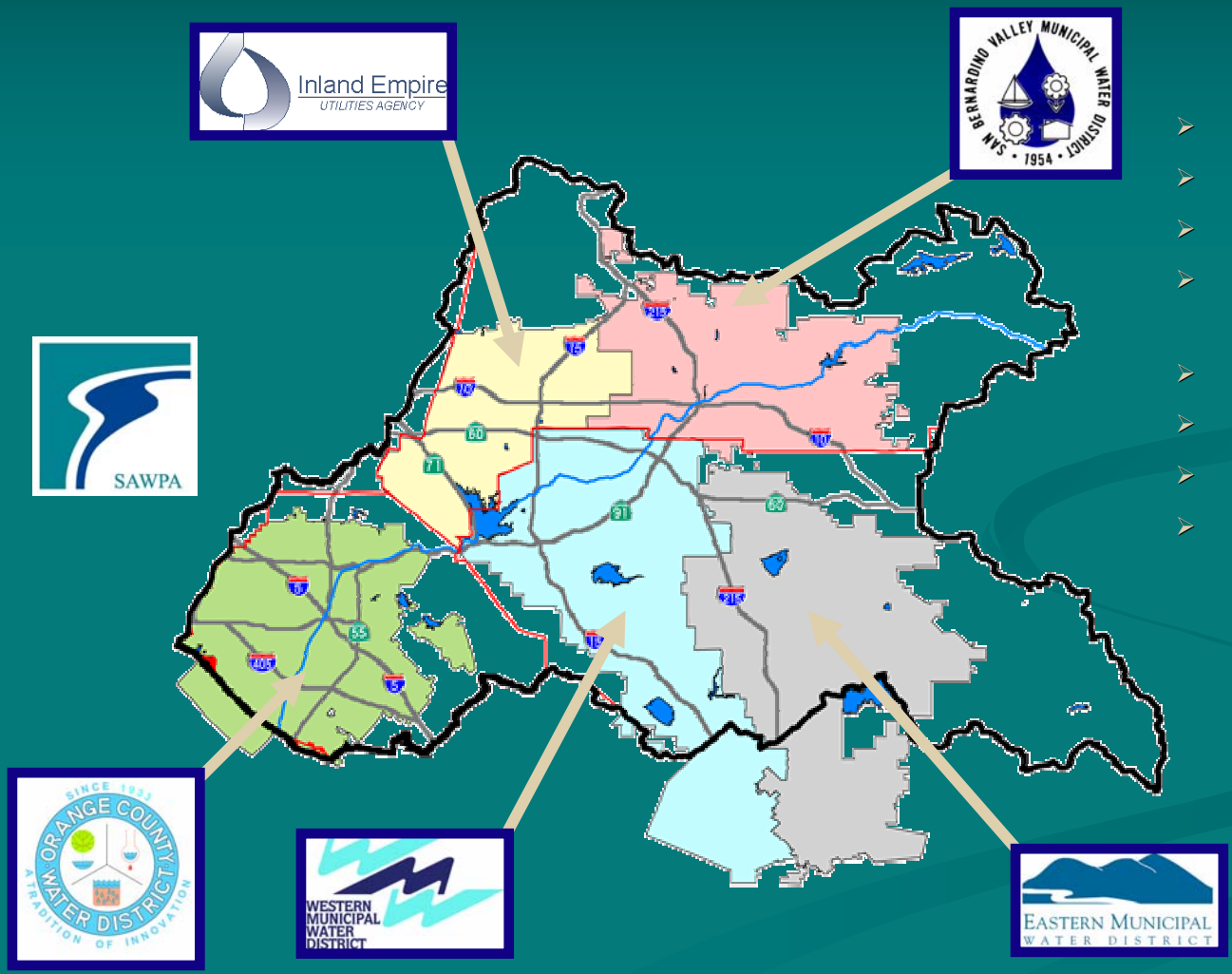
Adopted by the
Santa Ana Watershed Project Authority
June 2002

SAWPA


The Santa Ana River Watershed
The Santa Ana River Watershed
San Gabriel Mtns.
San Bernardino Mtns.
Chino Basin
Los Angeles
Orange County
Santa Ana Mtns.
Lake Elsinore/ San Jacinto Watershed
San Jacinto Mtns.
Pacific Ocean

Collaboration

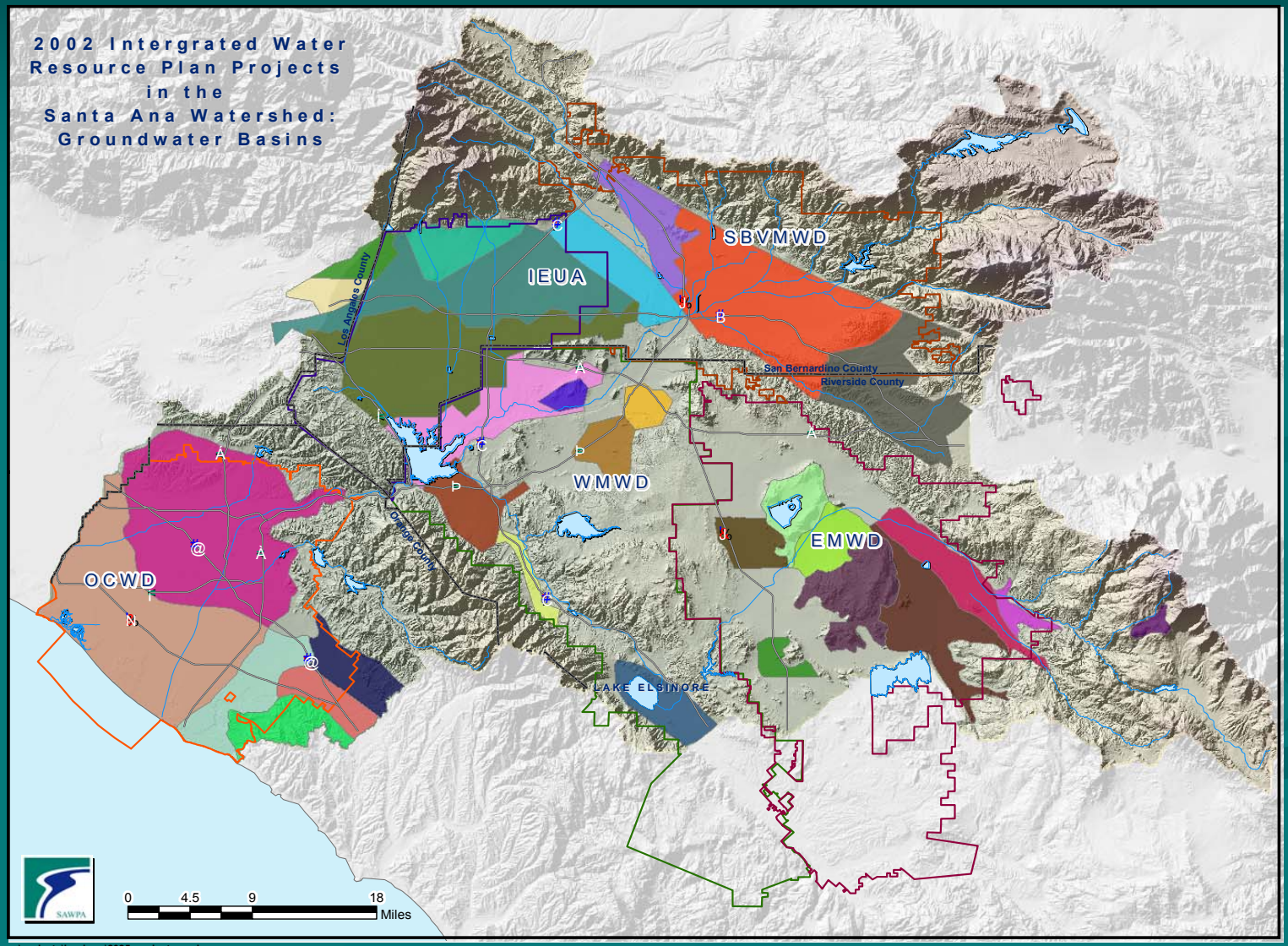
SAWPA Member Agencies



Other Stakeholders

- 97 Water-related Agencies
- 4 Counties
- 59 Cities
- State water, environmental, and regulatory agencies
- Federal agencies
- Other Special Districts
- Special Interest Groups
- 5 million (and growing) residents

Watershed Groundwater Basins

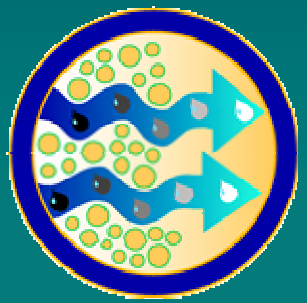


Purpose of the IWRP Update

- Update 1998 Water Resources Plan
  - Planning tool updates
  - Funding status changes
- Chart project benefits in six major categories
- Identify short-term and long-term challenges to a stable watershed
- Both specific and long-term planning project goals at 2010, 2025, and 2050 for water supply, quality and salt balance

Six Major Project Categories

Water Storage



Water Quality Improvements

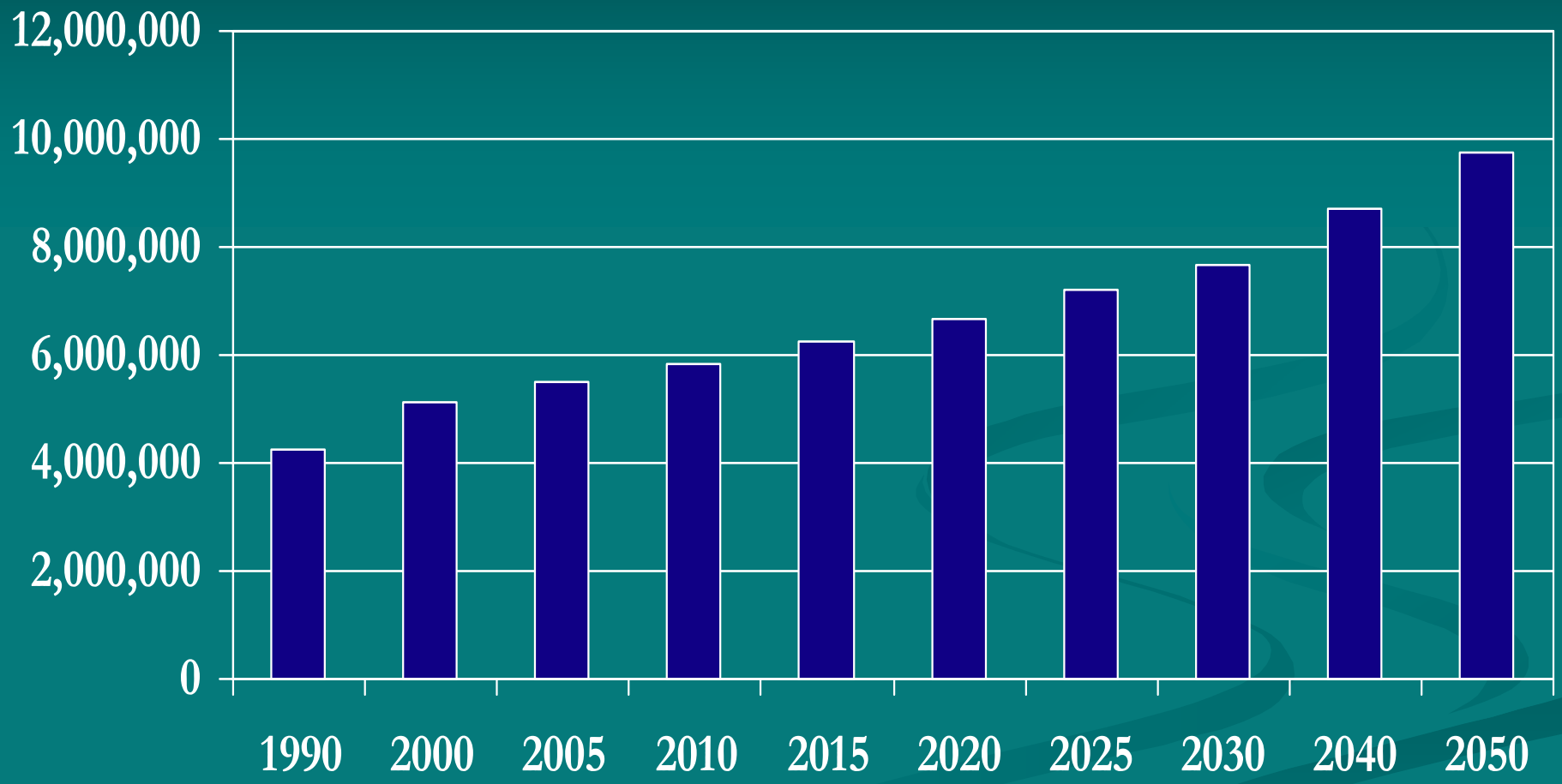
Water Recycling

Flood Protection

Environment and Habitat

Recreation and Conservation

Population: 1990-2050



SOURCE: Southern California Association of Governments and CSUF Center for Demographic Research

Data Gathering and Process

- Determine data needed to update the plan
  - Water demand, quality, planned projects, capacity, effluent
- Formal request, use UWMPs, independent data
- Five member agencies and sub-agencies
- Compare data to historic and forecasts
- Compare data to other published sources
- Compare data with MWD and others who aggregate data
- Compile and report to sources

Example Tables from IWRP

Microsoft Excel - Table 11.2 Demand vs IWRP Project Projections

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Reply with Changes... End Review...

A1 fx Table 11.2

Table 11.2

Current and Projected Regular and Drought Year Imported Water Demands in the Santa Ana Watershed (AFY) With and Without IWRP Long-Term Supply Sources

EMWD

Year	2000	2010	2025	2050
Regular Year Imported Demands	68,000	98,700	132,700	200,800
Drought Year Imported Demands (7% Increase)	72,760	105,609	141,989	214,856
IWRP Supply Sources Not Included in Agency Water Demand Projections				
Conservation*	0	11,675	17,174	21,490
Regular Year				
Recycled Water Projects (Conceptual)	0	0	1,445	1,796
Groundwater Desalting/Ion Exchange (Conceptual)	0	0	33,600	78,400
Subtotal	0	0	35,045	80,196
Drought Year				
Hemet/San Jacinto Conjunctive Use Cross Basin and Pipeline	0	6,660	6,660	6,660
Hemet Conjunctive Use/Long Term Shift	0	8,330	8,330	8,330
Lakeview Conjunctive Use/Long Term Shift	0	3,330	3,330	3,330
San Timoteo Conjunctive Use Facilities	0	4,125	29,700	28,050
Regional Conjunctive Use – Chino Basin Transfer	0	0	41,750	66,800
Subtotal	0	22,445	89,770	113,170
Total Additional Supply Sources During Drought Year	**0**	**34,120**	**141,989**	**214,856**
Year	**2000**	**2010**	**2025**	**2050**
Imported Water Demand With				

EMWD / IEUA / OCWD / SBVMWD / WMWD / Totals / Proje

Draw AutoShapes

Ready

Microsoft Excel - IWRP 2002 Project List.xls

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Reply with Changes... End Review...

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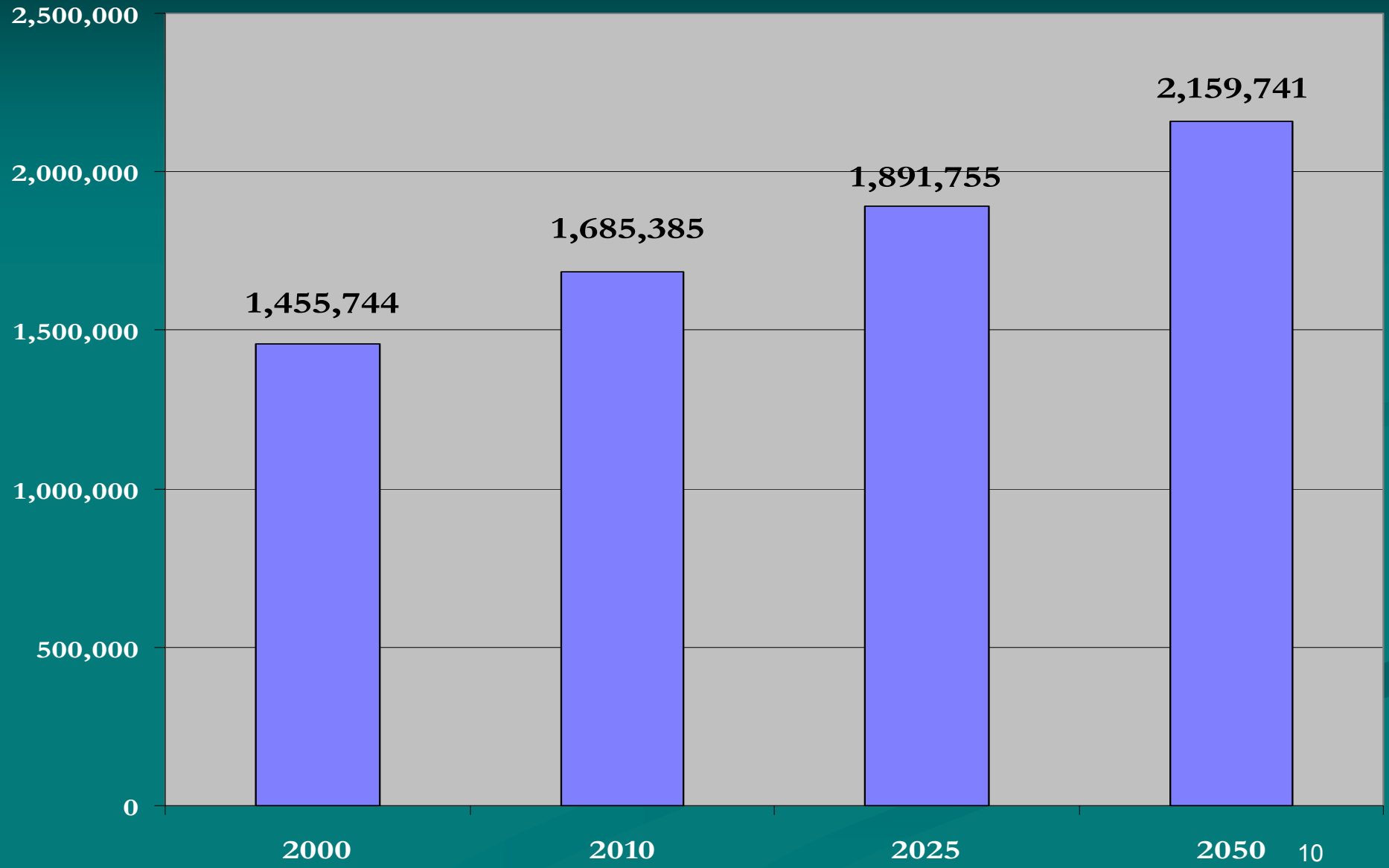
Projects for the SAWPA IWP Funding in the Santa Ana River Watershed

**Projects Already Funded under the Southern CA Integrated Watershed Program (SCIWP) Project

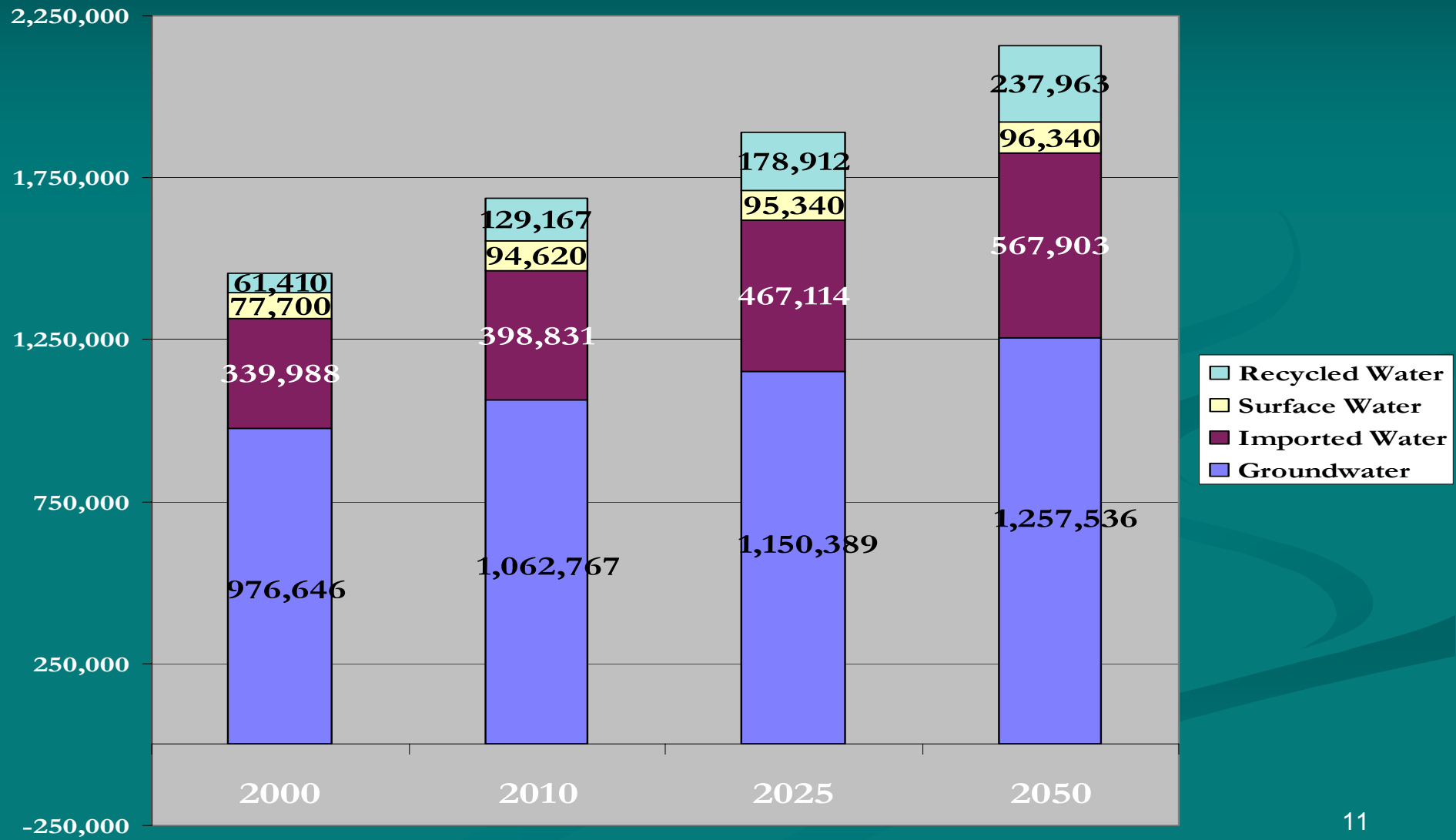
Region	Project Name	Total Cost (millions)	Local (millions)	State (millions)	Regional (millions)	Federal (millions)	SAWPA Index #	Storage (AFY)	Yield (AFY)	Implementing Agency
Water Quality Improvements										
IEUA										
	Jurupa Wellhead Ion Exchange Treatment	5.00	0.00	1.25	1.25	2.50	171		4,500	Jurupa
	Upland Wellhead Ion Exchange Treatment	3.00	0.00	0.75	0.75	1.50	216		2,700	Upland
	Fontana Water Co. Wellhead Ion Exchange #1	4.00	0.00	1.00	1.00	2.00	215		3,700	Fontana W.C.
	Fontana Water Co. Wellhead Ion Exchange #2	4.00	0.00	1.00	1.00	2.00	214		3,700	Fontana W.C.
	CCWD #3 Reservoir 3A WellTreatFacility	1.85	0.93	0.46	0.00	0.46	223		3,500	CCWD
	CCWD #4 Reservoir 2A WellTreatFacility	7.12	3.56	1.78	0.00	1.78	224		6,300	CCWD
	CCWD #5 Reservoir 3 WellTreatFacility	6.79	3.40	1.70	0.00	1.70	225		9,700	CCWD
	Chino Nitrate Removal Plant	4.30	0.00	1.07	1.08	2.15	210		13,441	City of Chino
	Chino Hills New Well with Wellhead Ion-exchange Treatment	2.12	0.00	0.53	0.53	1.06	208		3,000	City of Chino Hills
	San Antonio Water Co. Retrofit Well and Wellhead Ion-exchange Treatment	2.00	0.00	0.50	0.50	1.00	205		3,000	San Antonio
	Ontario #6 Wellhead Ion-Exchange Treatment & Transmission Line	3.50	0.00	0.87	0.88	1.75	193		5,000	Ontario
	MVWD #6 New Well	2.14	1.07	0.54	0.00	0.54	119		4,700	MVWD
	MVWD #7 New Well	0.88	0.44	0.22	0.00	0.22	199		1,450	MVWD
	City of San Bernardino TCE Cleanup	6.60	1.65	1.65	0.00	3.30	17		10,000	San Bernardino
WMWD										
**	Rubidoux CSD WTF Cleanup	0.60	0.00	0.45	0.00	0.15	64		4,839	RCSD
**	March ARB Cleanup Recovery	1.02	0.00	0.77	0.00	0.25	60		300	WMWD
	Canyon Lake Aeration/Oxygenation	0.50	0.00	0.30	0.00	0.25	121			LESJWA
	Lake Elsinore Wetlands Treatment	12.00	0.00	6.00	0.00	6.00	123			LESJWA
	Lake Elsinore Aeration/Oxygenation	11.10	0.00	5.55	0.00	5.55	228			LESJWA
	EVMWD Railroad Canyon Nutrient Removal	2.50	0.63	0.62	0.00	1.25	124			LESJWA
	EVMWD Regional Plant Nutrient Removal	6.60	1.65	1.65	0.00	3.30	125			LESJWA
	Canyon Lake East Bay Siltation Removal	3.60	0.00	0.00	0.00	3.60	155			RCFCWCD

The List / The Programs / Sheet3

Current and Projected Direct Use Water Demands in the Santa Ana Watershed (AFY)



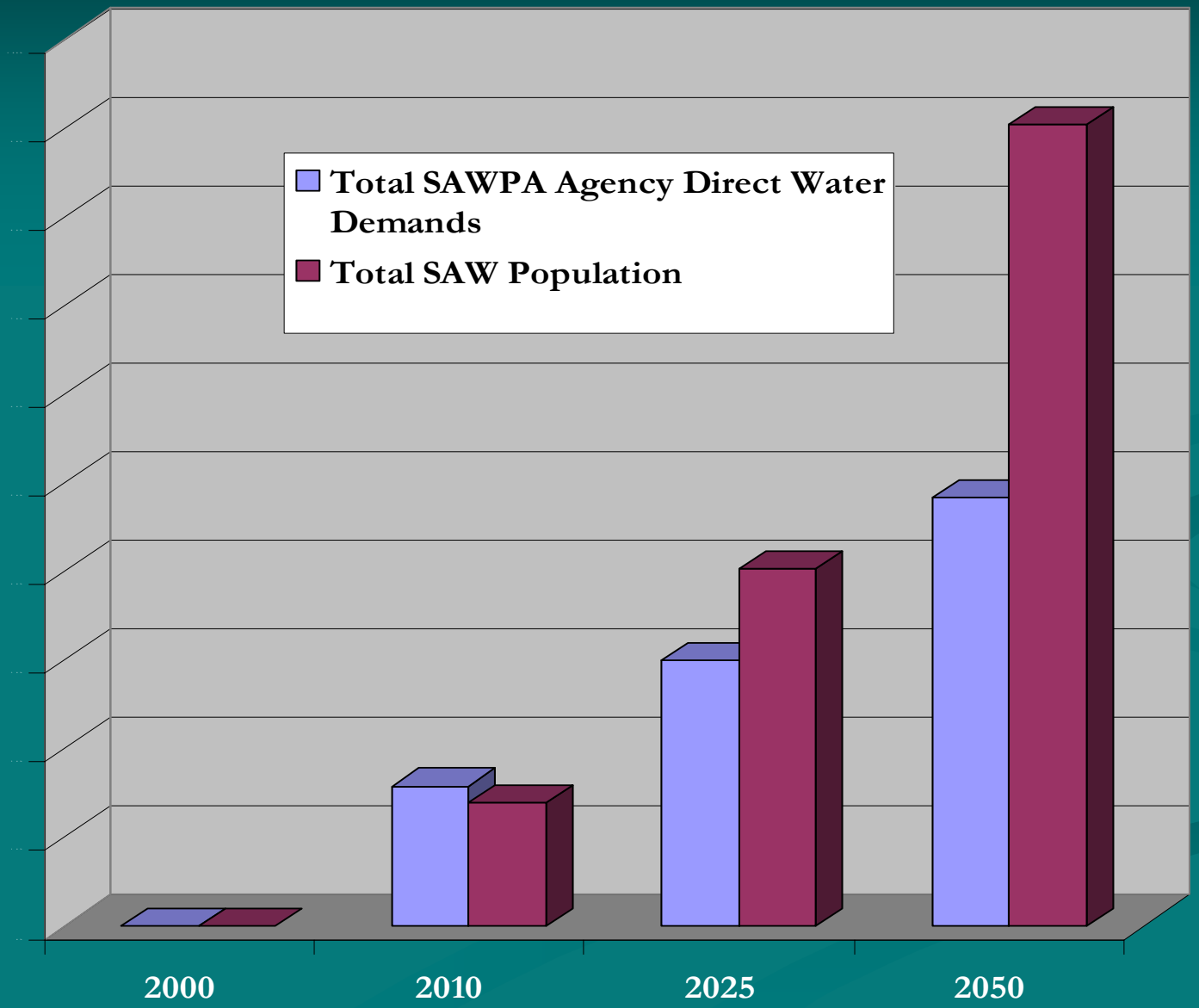
Current and Projected Water Supply Sources to Meet Direct Use Water Demands in the Santa Ana Watershed (AFY)



Process and Validation

- Comparisons provide differences in basis and assumptions; many differences, less in areas with regional plans
- Adjust for differences and validate with provider
- Compile for review and vetting with agencies
- Determine yield and quality of planned projects
- Meetings with all providers and management
- Complete analysis of quantity and quality factors

Current and Projected Direct Use Water Demand Growth (Without Conservation) vs. Population Projection Growth in the Santa Ana Watershed



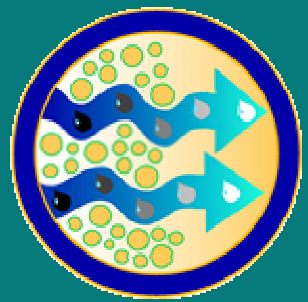
2025 & 2050 Zero Imported Water During Drought Year

- Regular year supplies – provide new water supply year round (water recycling, desalters, etc.)
- Conservation – ongoing water supply year round
- Drought year supplies – conjunctive use, drawn upon during times of drought
- Regular year water storage replenishment resumes once drought ends

IWRP Supplies Needed to Drought-Proof the Watershed

- **Conjunctive use projects:**
  - 2025 – 318,000 AFY
  - 2050 – 318,000 AFY

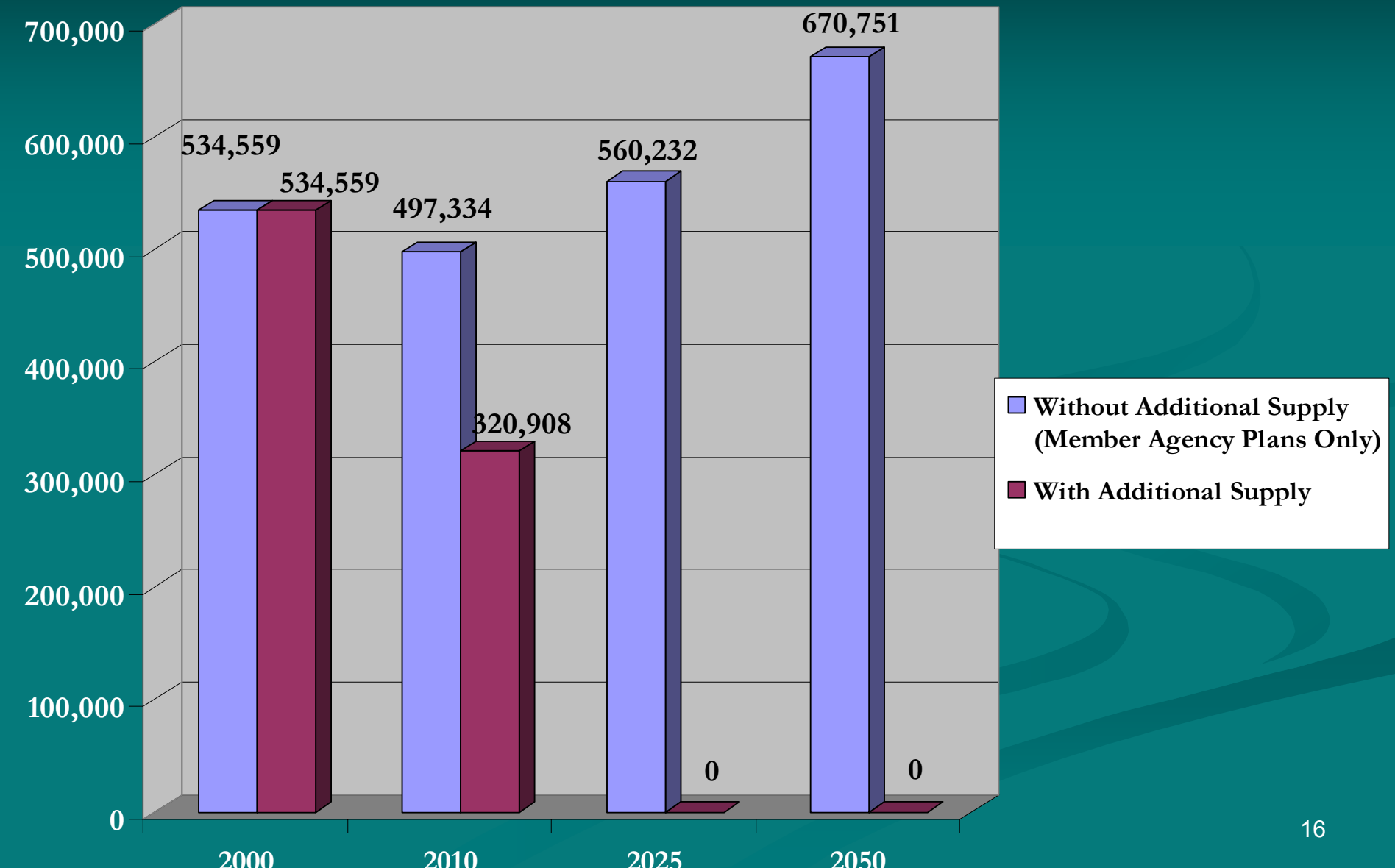
- **Recycled water project**
  - 2025 – 14,000 AFY
  - 2050 – 18,000 AFY



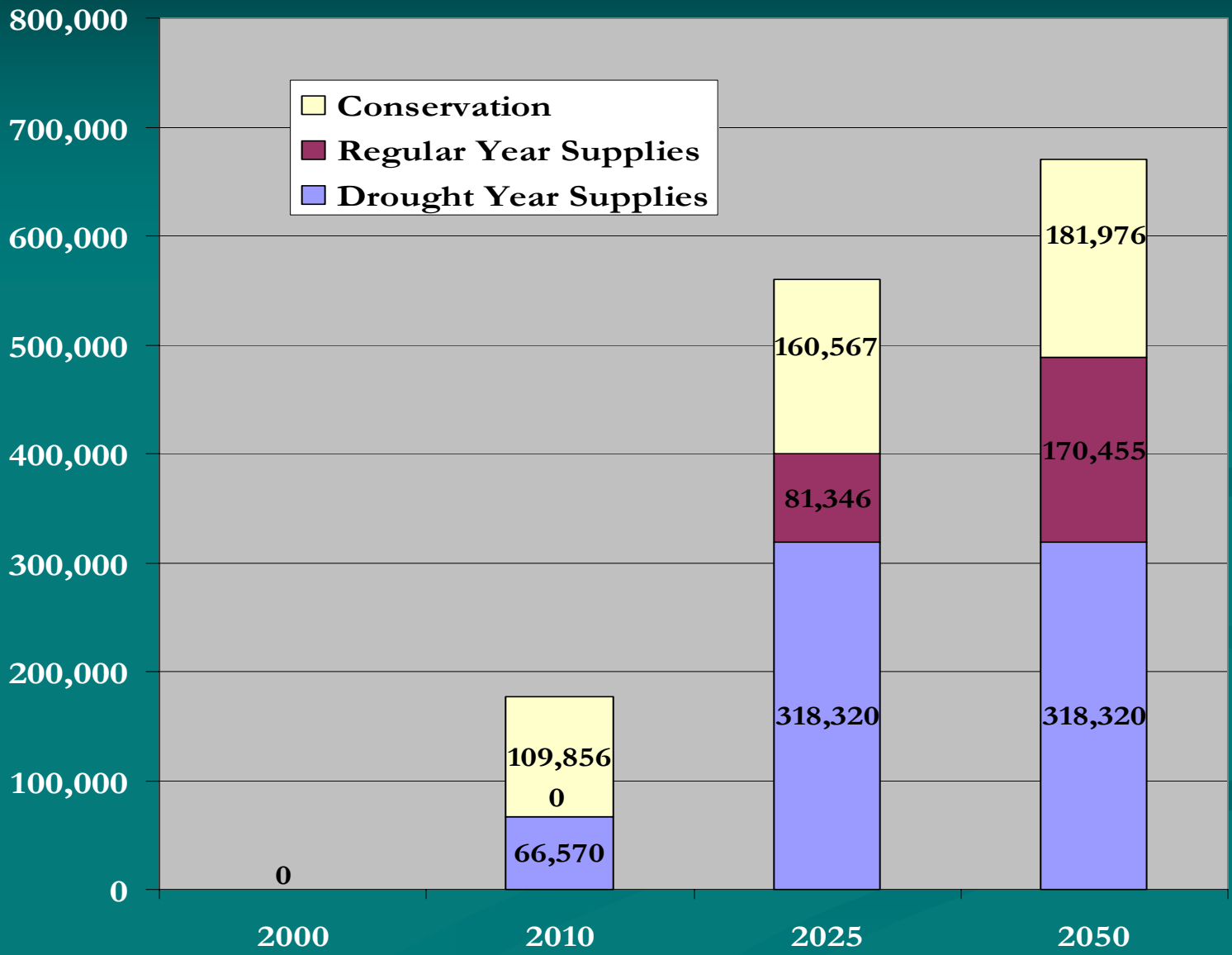
- **Desalting water projects:**
  - 2025 – 67,000 AFY
  - 2050 – 152,000 AFY

- **Conservation:**
  - 2025 – 161,000 AFY
  - 2050 – 182,000 AFY

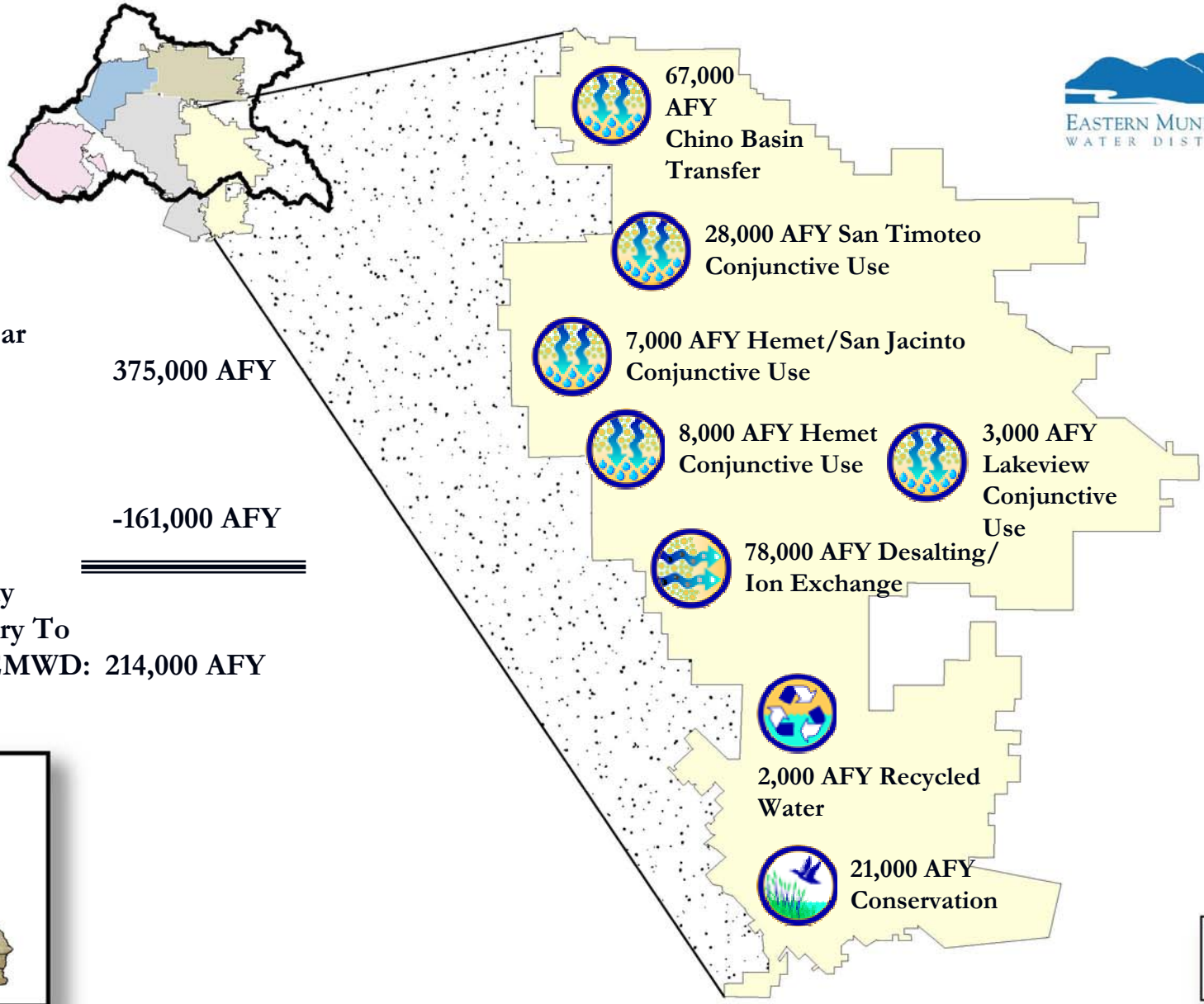
Projected Drought Year Imported Water Demands of SAWPA Agencies (AFY) with Proposed IWRP Projects



Potential Water Supply Available from Proposed IWRP Projects during Drought Year for SAWPA Agencies (AFY)



Long-Term Supply Sources to Drought-Proof EMWD - Year 2050 (AFY)



2050 Drought Year Requirements: 375,000 AFY

2050 Current & Planned Local Supplies: -161,000 AFY

Additional Supply Sources Necessary To Drought-Proof EMWD: 214,000 AFY

Figure 11.7

Long-Term Supply Sources to Drought-Proof IEUA - Year 2050 (AFY)

2050 Drought Year Requirements:	**506,000 AFY**
2050 Current & Planned Local Supplies:	**-396,000 AFY**
Additional Supply Sources Necessary To Drought-Proof IEUA:	**110,000 AFY**

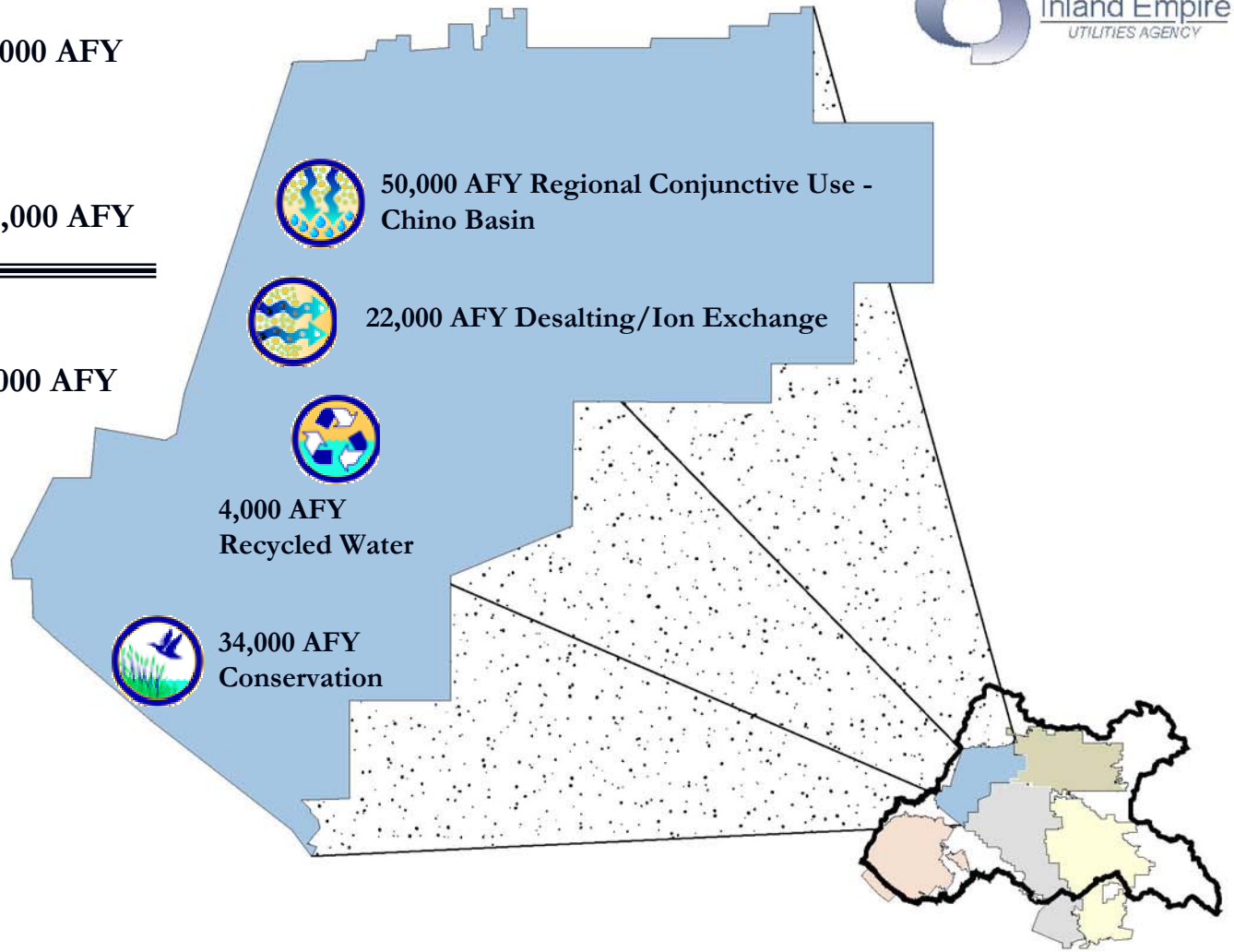
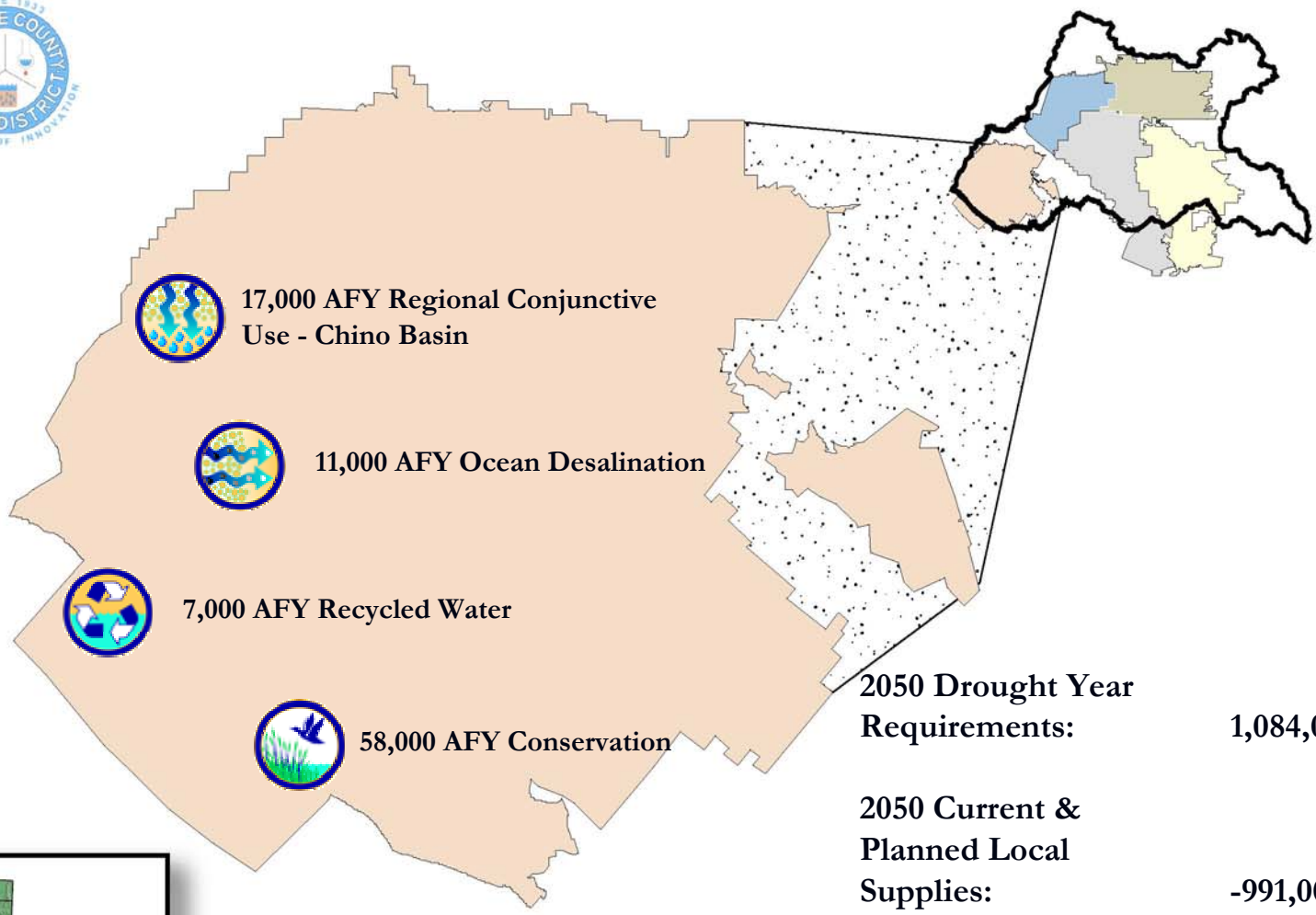


Figure 11.9

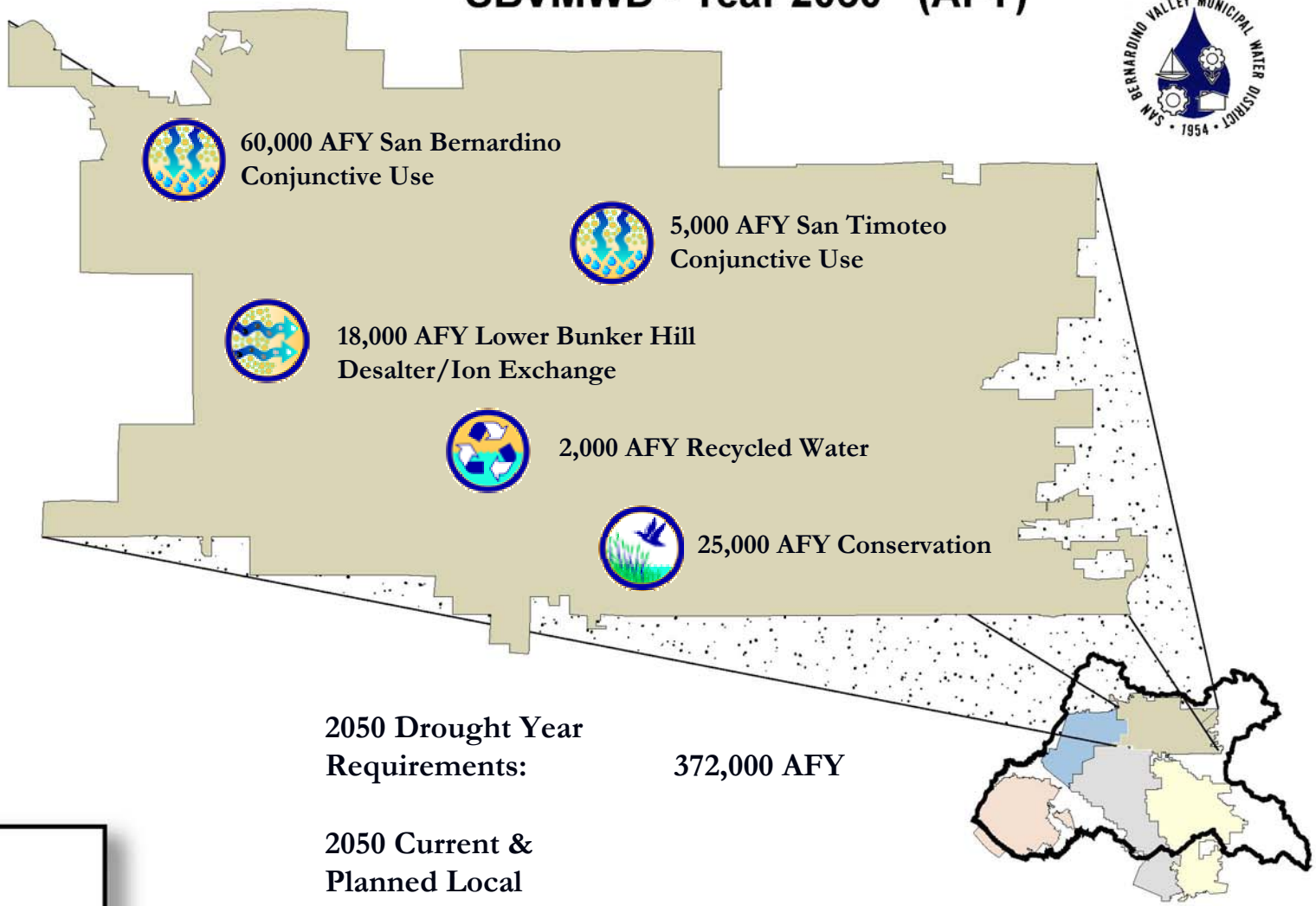
Long-Term Supply Sources to Drought-Proof OCWD - Year 2050 (AFY)



2050 Drought Year Requirements:	1,084,000 AFY
2050 Current & Planned Local Supplies:	-991,000 AFY
Additional Supply Sources Necessary To Drought-Proof OCWD:	93,000 AFY

Figure 11.11

Long-Term Supply Sources to Drought-Proof
SBVMWD - Year 2050 (AFY)



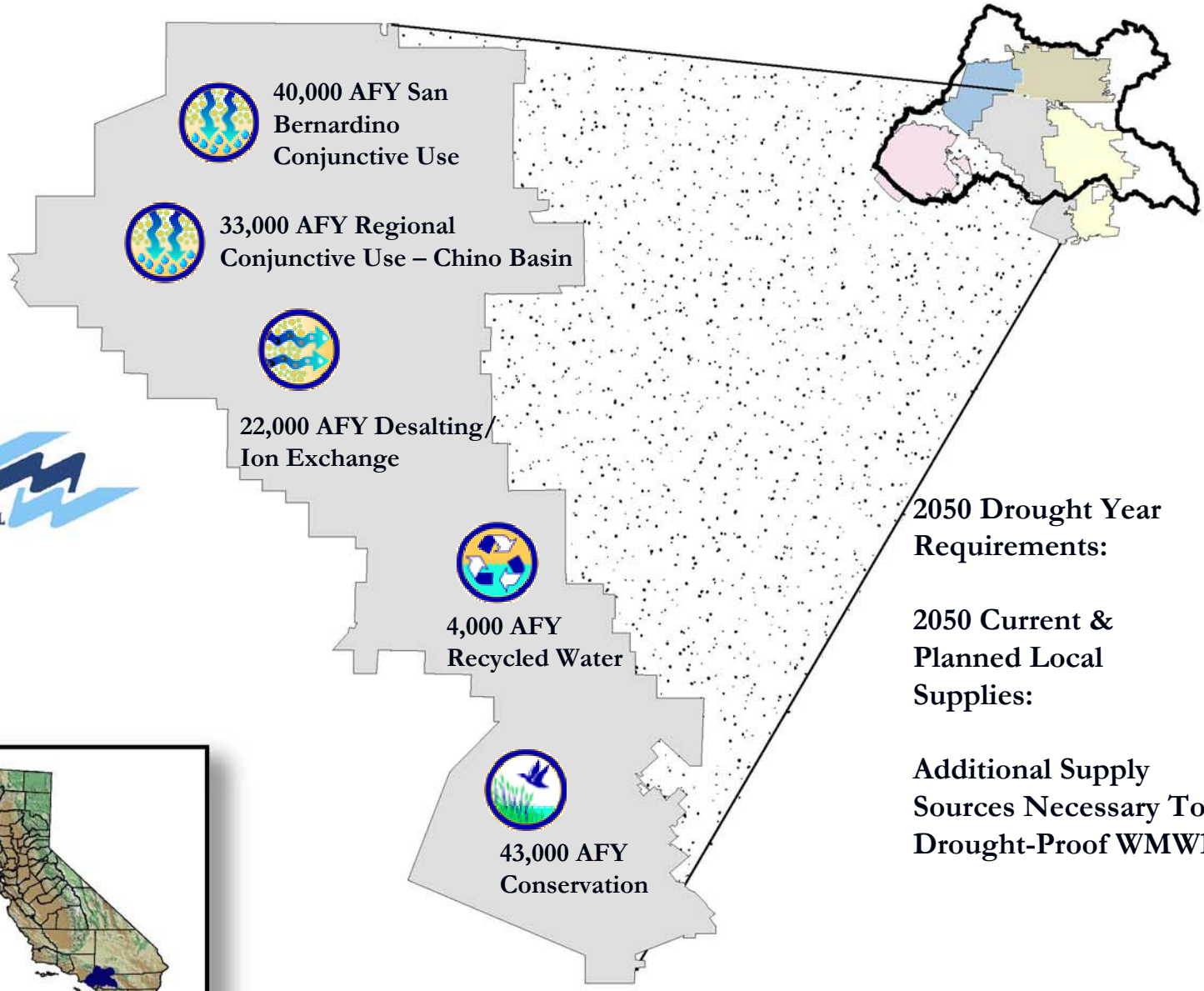
2050 Drought Year Requirements: 372,000 AFY

2050 Current & Planned Local Supplies: -262,000 AFY

Additional Supply Sources Necessary To Drought-Proof SBVMWD: 110,000 AFY

Figure 11.13

Long-Term Supply Sources to Drought-Proof WMWD - Year 2050 (AFY)



WESTERN MUNICIPAL WATER DISTRICT

2050 Drought Year Requirements: 572,000 AFY

2050 Current & Planned Local Supplies: -430,000 AFY

Additional Supply Sources Necessary To Drought-Proof WMWD: 142,000 AFY

Figure 11.15

SAWPA

Salt Balance (Tons) in the Santa Ana River Basin
Year 2000
with Member District Plans

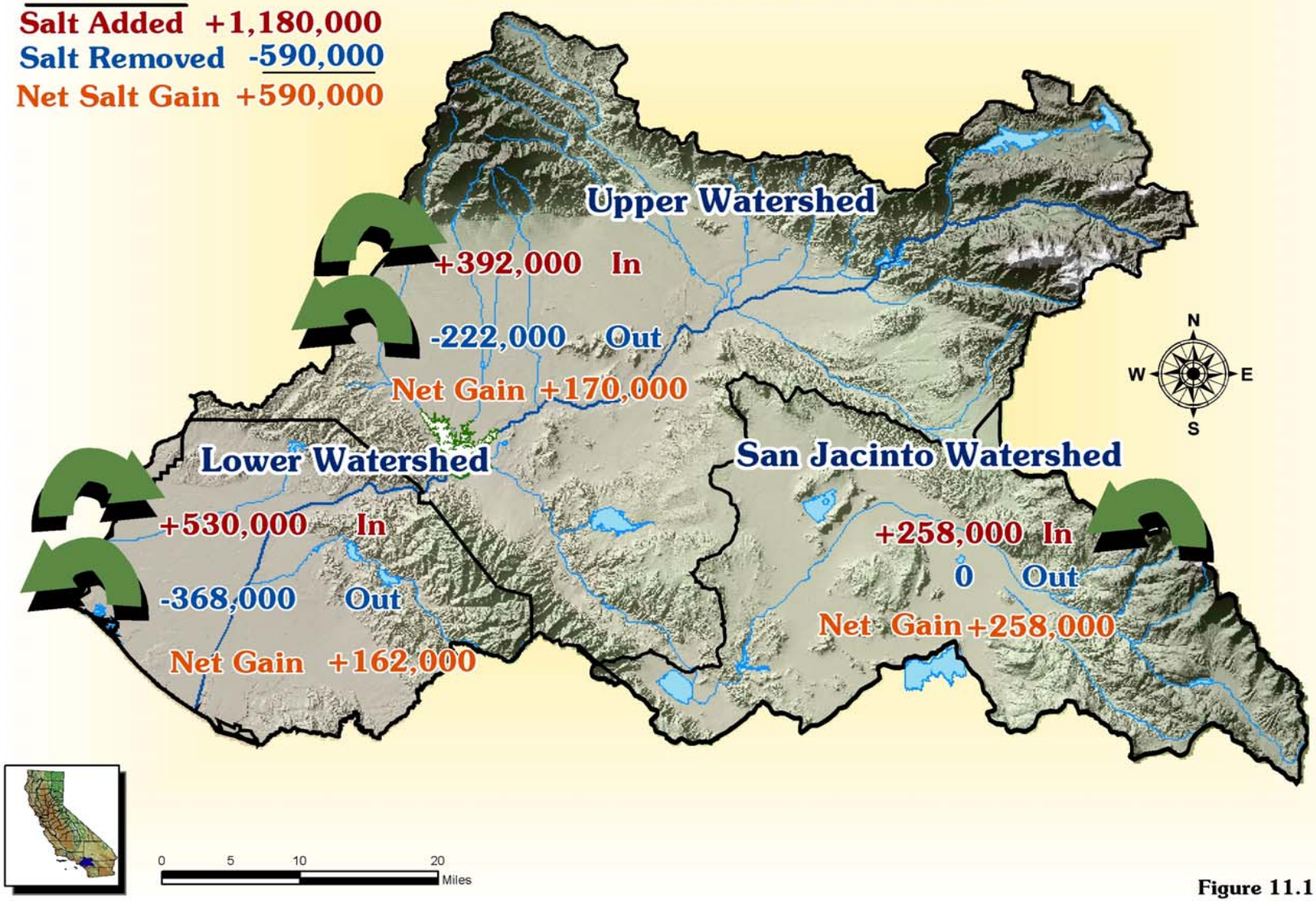


Figure 11.1

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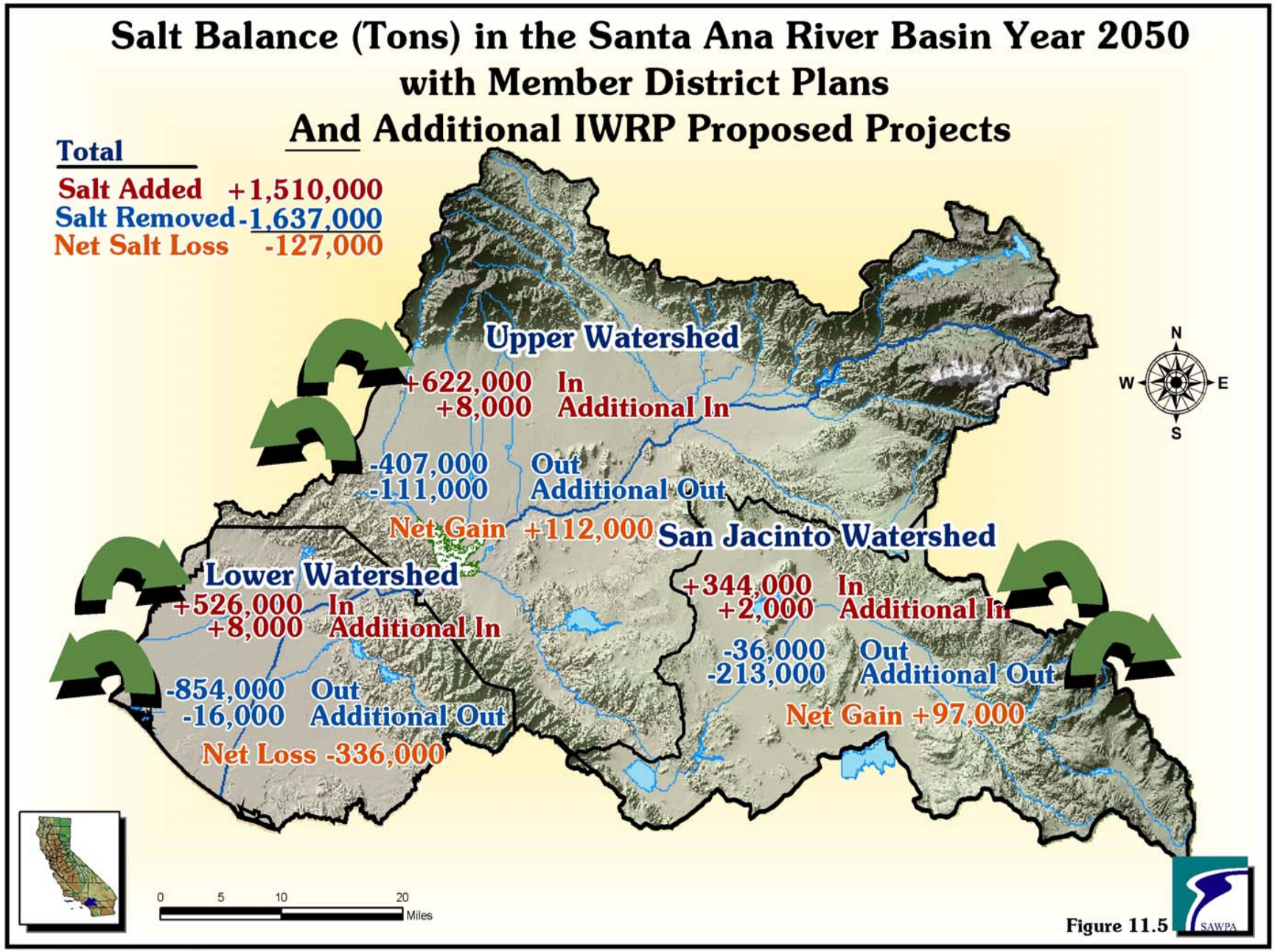

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Findings

- Population growth projections show a planning gap beyond year 2020
- Expand listed projects to reduce drought year imported water demand on the State and Colorado River System:
  - Conjunctive use/Groundwater Banking
  - Desalting/ion exchange and Recycled water
  - Conservation
- Salt Balance NOT achieved by projects in current local agency plans
- Watershed Salt Balance can be achieved by 2050 with IWRP drought-proof projects

IWP Planning Results

- Proposition 13 Funded Projects
  - 17 projects by Local Agencies significantly and quickly increase water supply
  - Approximately 292,000 acre-feet per year new local water supply being created
  - $235 Million matched 2:1 resulting in over $800M in investment in the future regional water supply
  - Total project costs average a little more than $100 per acre-foot per year
  - Significant water quality and environmental benefits